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MODEL FOR ALZHEIMER'S DISEASE AND OTHER NEURODEGENERATIVE DISEASES

ABSTRACT OF THE DISCLOSURE

The present invention provides a model for studying the development of, and/or pathologies associated with neurodegenerative diseases, and agents that can alter such development and/or pathologies. The model of the invention is especially useful as an Alzheimer's disease model. The model of the invention provides brain cells and a method for increasing neurodegenerative disease characteristics in such cells, especially, induction of neurofibrillary tangles and/or phosphorylated tau and/or tau fragments and/or the production and/or release of cytokines and/or microglia reactions and/or activations and/or inflammation and/or conversion of p35 to p25 and/or the levels and activities of protein kinases by selectively increasing the concentration of cathepsin D to an effective level, and/or by lowering the concentration of cholesterol in such cells. The model also provides a method of reversing such effects, by inhibiting cysteine protease and mitogen-activated kinase activity, and especially, by inhibiting calpain, and/or MAP kinase.